

## Recognition of *Cenogenus* Chamberlin, 1919 (Polychaeta: Lumbrineridae) based on type material

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*Abstract.*—*Cenogenus* Chamberlin with *C. descendens* Chamberlin as its only species has been considered a junior synonym of *Lumbrineris*. It is here redescribed and emended as a distinct genus. Its diagnostic features include a single antenna in the nuchal fold; single digitate branchiae on anterior parapodia; maxillary apparatus of labidognath type, with four plates, maxillae III and IV edentate, maxillae V absent; mandible partially fused and simple multidentate hooded hooks. *Paraninoe* Levenstein (type species *Ninoe fusca* Moore) is a junior synonym of *Cenogenus*; both species, *C. descendens* and *C. fusca* are recognized based on type material.

Previously the external characters in lumbrinerids were considered to be uniform with simplicity and reduction of many morphological parts. Consequently, we have had a simplified generic system for the family, lumping all species described into only three or four genera. Current work on the taxonomy of lumbrinerids is changing this view; however, as a consequence of our earlier conceptions of the group, some genera were regarded as junior synonyms and have been forgotten or not considered during the creation of new taxa.

Chamberlin (1919) erected the genus *Cenogenus* to include specimens collected in abyssal depths provided with “a conical nuchal process present at anterior edge of first segment above, with four pairs of maxillae,” separating it in his key from other genera by the presence of only simple hooded hooks and with maxillae III and IV edentate. Hartman (1944), based upon these features, considered it a valid genus. However, Fauchald (1970) regarded this genus as a junior synonym of *Lumbrineris* de Blainville. Levenstein (1977) erected *Paraninoe* to include species provided with a nuchal organ and simple digitate branchiae;

she noted that most of the included species were confined to abyssal depths.

Here, I redescribe and emend *Cenogenus* and regard *Paraninoe* Levenstein, 1977, as a junior synonym.

### Materials and Methods

Type materials were borrowed from the collections of the National Museum of Natural History (USNM), Smithsonian Institution, Washington, and the Museum of Comparative Zoology (MCZ), Harvard University, Cambridge. The measurements were standardized to setiger 10; they are abridged as L10 for length to setiger 10, and W10 for width at setiger 10. Illustrations were made with a camera lucida.

*Cenogenus* Chamberlin, 1919, emended

*Cenogenus* Chamberlin, 1919:333–334.

*Paraninoe* Levenstein, 1977:189–197, figs. 1–2.

*Type species.*—*Cenogenus descendens* Chamberlin, 1919, by original designation.

*Emended diagnosis.*—Single small antenna in nuchal fold. Setae include limbate capillaries, limbate robust, and simple mul-

tidentate hooded hooks. Anterior segments with a parapodial branchia dorsal and posterior to parapodia. Maxillary apparatus and labidognath type; with four pairs of maxillae, maxillae I forceps-like with smooth edges and bridles poorly developed, maxillae II of similar length to maxillae I, maxillae III and IV edentate plates (maxillae V absent); mandibles partially fused.

### Discussion

Chamberlin (1919) erected *Cenogenus* based on the presence of a nuchal antenna, maxillary apparatus with four well developed plates with maxillae III and IV edentate and setae limbate and simple multidentate hooded hooks.

Chamberlin misinterpreted the parapodial shape of *C. descendens*; he regarded the parapodia as lacking a presetal lobe and having a finger-like postsetal lobe. In fact, the parapodia have both lobes, but they are inconspicuous, and there is a simple digitate branchia posterior to the parapodia on the dorsal side in anterior segments.

Fauchald (1970), following the traditional classification, regarded these characters as present in some species of *Lumbrineris*, and thus considered *Cenogenus* as a junior synonym of *Lumbrineris*. However, *Lumbrineris*, as defined in older systematic works, is a heterogeneous taxon that would include any abranchiate lumbrinerid; *Lumbrineris* s.s. includes only species without nuchal antennae and branchiae, with five pairs of maxillae and both simple and composite multidentate hooded hooks present (Orensanz 1990). Because the maxillary apparatus has four plates, anterior parapodia have a single branchia, nuchal antenna is present and only simple multidentate hooded hooks occur, Fauchald's synonym is here considered erroneous and *Cenogenus* is a distinct valid genus.

Levenstein (1977) erected *Paraninoe* to include species with a nuchal antenna, maxillary apparatus with four plates and postsetal lobe with a simple digitate branchia;

most were formerly included in *Ninoe* Kinberg. She stated that *Paraninoe* differs from *Ninoe* in the number of branchial filaments and in the shape of maxillae III and IV and listed five species included in her new genus. Later, Orensanz (1990) increased this list to 10 species.

Examination of type material of *Cenogenus descendens* Chamberlin, 1919 and *Ninoe fusca* Moore, 1911 (type species of *Paraninoe*) revealed that *Cenogenus* is a valid genus and *Paraninoe* Levenstein, 1977 is a junior synonym of it.

Following the list of species provided by Levenstein (1977) and Orensanz (1990), the species of *Cenogenus* includes *C. abyssalis* (Imajima & Higuchi, 1975), *C. antarctica* (Monro, 1930), *C. brevipes* (McIntosh, 1903), *C. descendens* Chamberlin, 1919, *C. fusca* (Moore 1911), *C. fuscooides* (Fauchald, 1970), *C. hartmanae* (Levenstein, 1977), *C. monotentaculata* (Averincev, 1972), *C. nagae* (Gallardo, 1968), and *C. simpla* (Moore, 1905).

*Lumbrineris minuta* Théel, 1879 was placed as a member of *Paraninoe* by Miura (1980); in the original description, its maxillary apparatus was described without maxillae V and only simple hooded hooks. However, Oug (1998) reviewed the type material and stated that it has a maxillary apparatus with five pairs of maxillae, with maxillae V free. Oug also indicated the presence of more than one species in the type material of Théel's species. A study of better material is needed to assess its generic status.

Consequently, *Lumbrineris minuta* Théel, 1879 cannot belong to *Cenogenus*; however, *P. minuta* sensu Miura (1980) is a species of *Cenogenus*.

*Cenogenus descendens* Chamberlin, 1919  
Fig. 1A–G

*Cenogenus descendens* Chamberlin, 1919:  
333–334.

*Material examined.*—Syntypes of *Cenogenus descendens* Chamberlin (USNM

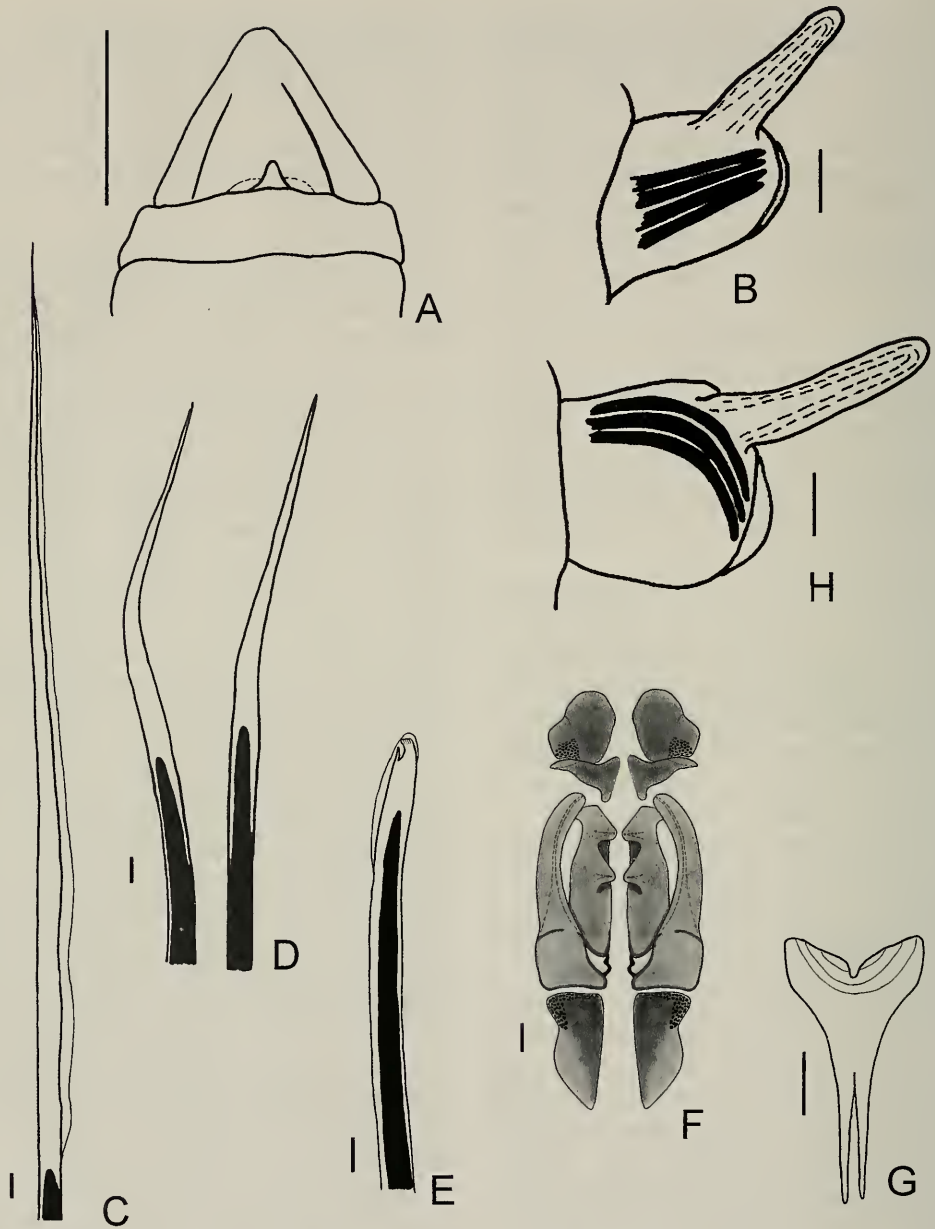


Fig. 1. *Cenogenus descendens* Chamberlin, 1919. A, prostomium, dorsal view (USNM 19344); B, second parapodium, frontal view (USNM 19344); C, long limbate seta (MCZ 2302); D, stout limbate setae (MCZ 2302); E, simple multidentate hooded hook (MCZ 2302); F, maxillary apparatus (USNM 19344); G, mandibles (USNM 19344); *Cenogenus fusca* (Moore, 1911); H, second parapodium in frontal view (USNM 17338). Scales: A = 15 mm; B, C, G, H = 0.2 mm; D-E = 13  $\mu$ m; F = 26  $\mu$ m.

19344, one specimen and MCZ 2302, one specimen and one slide). Peru, 111 miles NW off Aguja Point (5°42'S, 83°0'W), 11 Nov 1904, *Albatross* sta. 4651, 4066 m.

*Description.*—Syntypes of *C. descendens* are all incomplete. USNM specimen broken in four fragments, anterior end with 29 setigers (L10 = 5.2 mm, W10 = 2.5

mm); MCZ specimen broken in two parts with ca. 70 setigers (L10 = 5.1 mm and W10 = 2 mm).

Prostomium conical, short, about as long as wide, with a pair of divergent dorsal longitudinal black bands; with a pair of nuchal organs and an antenna in the nuchal fold (Fig. 1A). Peristomium shorter than prostomium; separation between rings distinct dorsally and laterally, ventrally with a shallow lip; both rings of similar length.

All parapodia well developed, but first four smaller. Parapodia with inconspicuous pre- and postsetal lobes. First parapodia with an unilobulated digitate branchia attached dorsal and posterior to the parapodia (Fig. 1B), diminishing in length on middle segments and absent on the posterior segments.

Anterior parapodia with very long limbate setae (Fig. 1C), middle and posterior parapodia with stout limbate setae, shorter than setae of anterior parapodia (Fig. 1D), and simple multidentate hooded hooks (Fig. 1E). All setae with black core from the base to near tip where they become translucent. Parapodia with three to five black aciculae with mucro; aciculae located in the middle of parapodia in all setigers; straight.

Short and stout maxillary apparatus, with four pairs of maxillae (Fig. 1F). Mandibles well calcified, with shaft separated along half of length (Fig. 1G). Maxillary carriers distinctly shorter than maxillae I, anterior end slightly constricted. Maxillae I forceps-like with smooth edges, bridles poorly developed; maxillae II stout, of similar length to maxillae I, with two broad teeth in the anterior end; maxillae III and IV edentate plates.

*Distribution*.—Off Aguja Point, Peru, in abyssal depth.

*Cenogenus fusca* (Moore, 1911)

Fig. 1H

*Ninoe fusca* Moore, 1911:285–288, Pl. 19, Figs. 110–118.

*Paraninoe fusca* Levenstein 1977:190–191.

*Material examined*.—Holotype of *Ninoe fusca*, Moore (USNM 17338), off Santa Catalina Islands, California, U.S.A. (33°10'15"N, 121°42'15"W) 1 Apr 1904, Albatross Sta. 4397, 3953 m.

*Description*.—Specimen broken in two fragments, anterior end with 45 setigers (L10 = 6.3 mm and W10 = 3.2 mm).

The holotype of *Ninoe fusca* lacks maxillary apparatus, but it was well described and illustrated by Moore (1911) with four pairs of maxillary plates, maxillae II bidentate and maxillae III and IV edentate.

The shape of prostomium, peristomium, parapodia, setae and the distribution of the branchiae and setae resemble those of *C. descendens*. However, in parapodia two to five the aciculae are located in dorsal position and are curved (Fig. 1H).

*Distribution*.—Off Santa Catalina Islands, California, U.S.A. in abyssal depth.

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